

## **REQUEST FOR A/E SERVICES**

### **Absorption Chiller Replacement Waupun Correctional Institution (WCI)**

#### **DFD PROJECT NO. 13F3I**

**Agency:** Department of Corrections

**Facility Location:**  
200 Madison St.  
Waupun, WI 53963

#### **Introduction and Background:**

The absorption chiller at WCI provides air conditioning to the administrative offices and central control using steam that is generated year-round at the Waupun Central Generating Plant. A number of tubes in the unit have been found to be leaking over the past several years and have been plugged. The number of plugged tubes has reduced the capacity to the point that room temperatures on hot summer days become excessive.

The absorption chiller was last rebuilt over the 2008/2009 winter on project 08D1K. The associated cooling tower was installed in 2000 on project 00K2P. The WCI buildings are listed on the National Historic Register, and any changes to the building appearance or exterior fabric must, such as removal of wall sections or windows to allow installation or removal of equipment, be done in accordance with historic preservation practice.

#### **Scope of Services:**

The AE will be contacted for services in 2 parts. The first will be for Pre-design services in accordance with Section 3 of the *DFD Policy & Procedure Manual for Architects/Engineers and Consultants*. Upon successful completion of Part 1, the second part of the contract will be for design through construction administration services.

#### **Part 1 - Pre-Design**

Study the operation of the absorption chiller and cooling tower and the cooling loads of the building areas serviced including present loads and any anticipated changes over the expected life of the equipment. The study should include a life cycle economic analysis of repair of existing equipment, replacement of existing equipment with either absorption steam or electric systems, various sizing options, and various operational and maintenance concerns, including method of control of each type of system. Prepare a written report recommending alternative design approaches considering historic issues, difficulties of equipment installation in a secure corrections environment, limitations or cost impacts of steam supply pressure and existing line sizing, and limitations or cost impacts of existing electrical service. The report should also include estimated costs and schedules.

Prepare a historic structures report and preservation plan in accordance with requirements of the State Historical Society for the design alternative selected by the State.

Prepare a Design Report for use by the DOC in seeking authorization by the State Building Commission.

## **Part 2 - Design**

Upon successful completion of Part 1 services and authorization by the State Building Commission, the AE will be contracted with for design through construction administration services of the selected design alternative.

## **Project Deliverables:**

In addition to the requirements of the *DFD Policy & Procedure Manual for Architects/Engineers and Consultants*, the AE will provide the following:

- Provide a Pre-Design report describing alternatives for the repair or replacement of existing chiller equipment including life cycle analysis, costs, schedules, and operational and maintenance needs of options considered. Include recommendations on options available to meet existing and future air conditioning loads in the WCI Administrative Building.
- Provide a Historic Structures Report and Preservation Plan for the selected design alternative.
- Provide design services that include a detailed contractor work plan to allow construction of recommendations to be completed with minimal disruption of existing inmate and staff daily activity.

## **Project Timeline:**

In order to plan for timely evaluation of recommendations and planning for subsequent construction activity, the selected A/E will be expected to complete the study and submit a Design Report within three months of issuance of a Notice to Proceed.

## **Skills and Knowledge:**

A qualified firm would have an appropriately staffed team with thorough knowledge, understanding, licensing and experience with the following:

- HVAC design in commercial buildings using Absorption Chillers in Wisconsin
- Building Automation Systems
- Standards for design and construction for state-owned correctional buildings
- Steam and condensate piping design
- Electrical power supply for HVAC equipment
- Structural design for support of large rotating equipment, pumps, and piping
- Historic Building Preservation

## **Preliminary Project Budget:**

Request for A/E Services  
Absorption Chiller Replacement Study  
13F3I Waupun Correctional Institution

Construction	\$600,000
Contingency	\$60,000
Pre-Design	\$18,000
Design	\$62,000
DFD Fee	\$27,000
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	\$767,000